of rare things. I have had a little experience in anti-typhoid vaccination. In Panama there was a small epidemic among the nurses of the hospital and we were unable to discover the origin. Neither the water nor the food supply could be convicted and a search for a typhoid carrier was fruitless. There was quite a little disturbance in the minds of the nurses and we instituted vaccination, making it voluntary. About 20 nurses and physicians were vaccinated and the epidemic ceased. At another time, my own little girl, if you will pardon the personal reference, developed a typhoid-like fever and we isolated from her blood the paratyphoid "B" bacillus. I vaccinated my family and none of the others became ill. Regarding the treatment of the chronic typhoid carriers, we were able to cure a urinary carrier, a little girl of four years, by vaccination with an autogenous vaccine. We gave her nine injections before eradicating the infection. I regard this prophylaxic measure against typhoid (antityphoid vaccination), as one of the great advances that medical science has achieved in these late years that have been so full of far-reaching discoveries. I wish to express again my appreciation of the paper that has just been read.

Dr. Geo. H. Evans, San Francisco: I would like to particularly emphasize one recommendation in this paper and that is the recommendation calling for the vaccination of nurses, doctors and internes. I would go further than that and would seriously recommend that the family physician urge upon his patients the necessity for typhoid vaccination. I have in my service at St. Luke's a nurse seriously ill with typhoid contracted in attendance upon one of my typhoid patients. The nurses in the training school have all been inoculated prophylactically. Regarding the negative phase I will present a personal illustration. I personally went through this inoculation a few months ago and one week after my second inoculation I presented a decidedly negative Widal. Fearing some mistake regarding the typhoid culture it was confirmed by a strain in use at the Presidio. About one month after there was a very strong and definite agglutionation, showing that in some cases there is a temporary negative phase following these inoculations. The question of immunity and the length of time of the immunity cannot, of course, be definitely decided at the present time. The whole question is too new.

Dr. René Bine, San Francisco: Not only is the author of this paper to be congratulated but the Society owes him a debt of gratitude for having brought before it his experiences in this work. The tremendous work of the Army Medical Corps along these lines is not appreciated by many of our members and unfortunately we as individuals cannot enforce such prophylactic measures as can be done in the army. It must be remembered that even in the army, however, no soldier has been, so far as I am informed, vaccinated against his wishes, and in view of the fact that reactions are seldom severe, soldiers are rather glad to get the period of rest necessitated by the routine of vaccination and observation following. My own experience with typhoid vaccination is limited to six cases—all persons exposed to the disease. No severe reactions occurred. The benefits to be obtained with typhoid vaccines in treatment of the disease, as has been stated, are rather uncertain. There is no uniformity in the doses recommended, some advising one million bacilli or less, others hundreds of millions. I have employed them in but two cases; in the first I thought I did some good, whereas in the second I am not sure that the vaccine did not slightly prolong the disease. Everybody has seen cases run such atypical courses as to realize the difficulties in estimating the results with such medication.

Dr. D'Arcy Power, San Francisco: To my mind the greatest value to be derived from Major Brooke's paper would be in getting its facts prominently before the public. In an editorial in the State Journal I attempted to do this some months ago and I believe that there is no field of experimental medicine which would be so readily understood and at the same time so helpful to establishing a right understanding on the part of the public of the value of medical research as a clear statement of what has been achieved and is yet possible by typhoid vaccination.

Dr. A. S. Lobingier, Los Angeles: I presume that typhoid fever is supposed largely to be a condition which interests only internists but any one who has had typhoid will recognize that it is a question of great importance to all. I do not know of any disease of acute character which will leave more evidence of impairment. I think the laity is very erroneous in believing that typhoid will benefit an individual. Typhoid very seriously complicates the gastro-intestinal tract. The fact that 80 or 85 per cent. of the pathological conditions are direct result of typhoid shows that it is a question of mortality.

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THE TUBERCULIDES AS OBSERVED IN SOUTHERN CALIFORNIA.*

By RALPH WILLIAMS, M. D., Los Angeles.

When, at the solicitation of Dr. Anderson, the author agreed to write a paper with the above title, he was under the opinion that it would be very easy to secure all the necessary data, in relation to the prevalence of the various manifestations upon the skin which the tubercle bacillus or its toxins may give rise, to render it of some value to you, and particularly to dermatologists in other portions of the country. However, in seeking this information from various members of the profession whom one would naturally expect to have come in contact with many cases, the author finds that their records have not been sufficiently accurately kept or have been otherwise lost or misplaced, as to render anything like a complete analysis possible. Consequently he will have to draw largely, if not entirely, upon such as have passed under his own observation either in private practice or at the dispensary of the Medical College of the State of California in Los Angeles, at which, either under its present name or its old one (the College of Medicine of Southern California), he has been in active and fairly constant attendance since 1893. The records of this institution also have unfortunately been displaced in part and are not strictly available for the purpose under consideration. You can readily see from the foregoing that most of the paper is an explanation and an apology.

One would naturally suppose that in Southern

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California where countless thousands have come for tubercular conditions of the lungs, that diseases which are closely associated with pulmonary tuberculosis, both in its active and its hereditary influences, that lupus vulgaris and tuberculosis cutis would be comparatively common in those who have sought our climate and its benefits, and particularly in their offspring. However, the tuberculides, as I have seen them, are comparatively rare. By rare, I mean that I do not suppose, from what I have been enabled to learn, that they are any more common here than elsewhere. Certainly we do not see such mutilating and far-reaching effects of these lesions as are commonly reported, photographed and under treatment upon the European continent and in England.

In an article of the author's, published in 1897, in analyzing twelve hundred cases of skin and venereal diseases, excluding syphilis, there were six hundred. Of these lupus vulgaris constituted three cases and tuberculosis cutis ten cases, showing a predominance of the latter over the former, which is perhaps the inverse ratio of other localities; and yet in the author's own private cases, out of some forty patients with one or the other of these lesions upon the skin, the ratio is reversed and lupus becomes the most common with some twenty-five cases and the tuberculosis cutis the remainder. My friend, Dr. Bancroft, of Los Angeles, had occasion in his connection with the public school department to inspect fifteen hundred school children, in only one of whom was there any condition upon the skin which might be attributed to a tubercular origin. This child presented a small patch of cutaneous tuberculosis. In the children's hospital in Los Angeles there are not at present any cases of either of these diseases. I was unable to get definite information in regard to the Catholic Orphan Asylum, where there are many more children than at the hospital.

In this article lupus vulgaris will be considered as a separate and distinct disease, not because of a separate origin, but because of its ancient and definite clinical manifestations which have been described many years previous to the discovery of the tubercle bacillus, and hence will probably for many years to come be classified as a clinical entity. We will not consider extensively either the clinical appearance or the histopathology of lupus or of cutaneous tuberculosis, since some of these are to be discussed in other papers.

Practically all patients with lupus vulgaris that have passed under the author's observation have been of mature years, since as you know the disease commonly begins in childhood or early youth and lasts indefinitely: it was the absence of lupus in children which first attracted attention and led to such investigation as has been made. The characteristic apple jelly nests have been present in all cases and it is due to their presence, together with the fact that in tuberculosis cutis they are usually absent and that in the latter disease its history frequently dates back only a few months or years, that the distinction is made for present purposes in this paper. Most of the patches that it has been necessary to destroy have been less than two inches in diameter, and the author only recalls two patients, both of whom were children and victims of lupus since early childhood, who presented at all the mutilated, scarred and superficially ulcerated appearance the photographs of which we see in our text-books. It is perhaps in dealing with such extensive lesions that foreign authorities do not consider several months or a year of time more than necessary to cure lupus, whereas the author, whose experience has been with the smaller and perhaps less malignant types of the disease, considers that the X-ray and the Finsen light treatments are absolutely a waste of time, particularly the latter, where, as you know, that in the Finsen Institute patients return day after day for hour after hour of treatment through months and months of time. The X-ray he has only found useful in such locations as the inner side of the nostril and particularly the eyelid where other and more active preparations cannot be safely used.

Tuberculosis cutis has occurred sufficiently often to be of distinct interest to all dermatologists and to a certain extent to other members of the profession. The type which has most commonly come under the author's observation has been undoubtedly a direct infection upon some vascular region, such as the lip, the side of the nose, or the cheek, and while the patient never considers the ulcer to be due to its real cause until explained, he has nearly always given a history of traumatism preceding the formation of the ulcer. Scratches by cats, razor cuts, any little break in the skin which after the appearance of the ulcer the patient in his mind goes back to some perhaps trivial incident or injury in that region; and yet following this clue one can usually find that at this or some similar time the patient has been in rather intimate contact with a tubercular individual, or he himself presents signs of pulmonary tuberculosis.

Consequently we have here a lesion appearing frequently after maturity and presenting various sizes, one or more plaques, usually one, of partly ulcerated and partly healed lesions of tuberculosis. The crusts are usually dark from an admixture of blood, thin and adherent, which when removed causes a fairly free oozing of the blood from the soft, ragged granulations beneath, and especially about the edges. The center of the crust is often free and partly floating in the shallow pool of pus covering the yellowish, worm-eaten base of the ulcer. The edges are more tender than the center; they are purplish in color and undermined, and are unhealthy and indolent notwithstanding the apparent freshness of the torn granulations.

If it is a group or patch of lesions, there will be soft scars in places and the bridges of healthy skin and tunnel sinuses as before mentioned. If the origin of the lesion is from a subcutaneous infiltration of tubercular masses, the scars are thicker and do not yield to tension, and when numerous as on the leg or arm, may cause a permanent deformity in limiting motion of the member. Usually these lesions are single, about

the size of a quarter, and situated most commonly about the face. They are susceptible of rapid and easy destruction and permanent cure by removal in various ways.

In the years that have passed, the term scrofuloderma was used to designate, as the author understood it, a peculiar constitutional diathesis of children born of tubercular parents, who carried upon their skin some signs of this disease. For practical purposes it embraces two forms, viz: lichen scrofulosus and the strumous ulcer. The first is not a true tuberculosis of the skin; at least, I do not think the bacilli have been found in the lesions, but the disease is practically confined to these subjects. It appears in the form of yellowish red papules a little larger than a pinhead. Later they fade in color, taking on a more dead-like brown, and when the papule disappears, leave a small stain of increased pigmentation. These papules are either single or in groups, slightly conical, and some even flat on top with a small scale attached. They are found chiefly around a hair follicle on the side of the neck and chest, in boys chiefly, from ten to seventeen years of age. The hair is often destroyed and a small pigmented scar remains. They itch but little and no scratch marks are seen as in eczema, neither are there any scales, as in lichen ruber and the punctate form of psoriasis. They are not angular, neither do they have the violaceous tint of lichen planus; but swollen glands, strumous ulcerations and the general health of the patient mark the hereditary type.

The Strumous Ulcer. This is not primarily a disease of the skin, that organ being affected secondarily by the extension of the disease from some subcutaneous focus, the most common manner being the softening and destructive ulceration of a tubercular gland making its outlet to the free surface. The slow process of the inflammation causes an adhesion of the gland to the skin and the entire mass becomes doughy, gets red, then purplish, then ulcerates. Secondary infection follows and the abscess secretes freely, while the skin edges of the sinus have no vitality and the tubercle infection spreads, usually in several directions, causing a type of tuberculosis cutis. Where, however, the skin is affected by the ulceration of an independent tubercular nodule or infiltrated mass instead of a gland, the resulting lesion is somewhat different. Here you have also the indolent purple edges, but the ulcer is not so deep, there is not much discharge. There may be many openings upon the skin which is undermined. The edges of the ulcer are ragged, with a grayish, worm-eaten base, and bridges of skin, sometimes healthy, lead from one opening to the other, under which probes may be passed. It is tender and bleeds easily. From the tubercular osteo-myelitis the sinus is usually single, except in very old cases.

While lupus vulgaris and tuberculosis cutis rarely affect the general health except when extensive in childhood, many of these patients are supposed to ultimately die of tuberculosis. This percentage is difficult to ascertain, and yet it has not been infrequently reported that a sudden exacerbation of the process in the lupus patch has been followed by general tuberculosis and death.

Tuberculosis Verrucosa Cutis: In this form the usual manifestations have been upon the hands or in one case the sacral regions,—most commonly the former, and in three cases out of five in the author's observation, they have been situated upon the thumb, affecting the dorsal surface. They presented the hypertrophied villous elevation with very scant secretion, more or less scarring and clearing in the centre; the edges alone partaking of active cell proliferation. These lesions are usually dryer and more indolent than any of the types of tuberculosis cutis, and in their destruction it is frequently necessary to go somewhat deeper with whatever agent employed than in the others.

Tuberculosis of the mucous membrane has been very rare, from the author's experience, so far as their limitation has been to the lips and to the mouth. They appear about the lips as shallow, jagged, very superficial, worm-eaten ulcerations, not crusted, the floor looks granular and a dirty yellow. This yellow is caused by the miliary tubercles mixed with fat granules, especially in the lips. Sometimes you may see the pure tubercle, previous to ulceration, upon the lower lip as if studded with jelly white miliary masses glistening through the mucosa.

The tongue is sometimes affected, but here the edges are harder and more painful. When they occur about the mucous membrane of the genital organs, particularly in women, they tend to crust, a thin, greenish black scale or film being formed; they bleed easily and are more painful than any other form of tuberculosis of the skin. The anterior pillars of the fauces have been affected in several of the author's patients, and particularly a small area well down and in front of the tonsil towards the base of the tongue, presenting a partly glazed, partly ragged, grayish ulceration, far more tender than syphilis and creating a sensation of a foreign body and a constant desire to swallow. In several of these patients of this particular type there has been a mixed syphilitic infection, but the presence of tuberculosis pulmonalis, extreme tenderness and pain and failure to yield upon syphilitic treatment, have rendered them in his mind of tubercular origin.

While this paper is not supposed to deal with the treatment of these lesions, the author would remind you that any application or any method of treatment which irritates and does not destroy the diseased tissues is detrimental to the cure of the disease; that the great majority of the patients may be cured where the configuration and location of the lesion permit, by the use of such destructive chemicals as are used for superficial epithelioma, by the use of the sharp curette followed by the actual cautery, by the use of carbon dioxide snow, and even in many instances by the prolonged use and constant contact of a strong mixture of salicylic acid and creosote, or with the X-rays for such lesions as occur about the eyelids or the lips.